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MORRISON, THOMAS A				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/809,513

**Applicant(s)**

ITO, YOSHIYUKI

**Examiner**

THOMAS A. MORRISON

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3-8 and 10-20 is/are pending in the application.
- 4a) Of the above claim(s) 16, 18 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-8, 11, 13, 17 and 20 is/are rejected.
- 7) ☒ Claim(s) 10, 12, 14 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. Applicant's amendment of 1/15/2008 has been entered.

#### ***Election/Restrictions***

2. The restriction requirement with regard to the species directed to Fig. 7, as set forth in the Office action mailed on 9/21/2006, has been reconsidered and is hereby withdrawn. Thus, claim 17, which is directed to Fig. 7, has been rejoined. However, claims 16, 18 and 19, which are directed to the other non-elected embodiments, remain withdrawn from consideration as being drawn to non-elected embodiments. Independent claim 1, from which claims 16, 18 and 19 depend, is not an allowable and generic claim, in view of the new rejection of claim 1 below.

The indicated allowability of claims 1, 3-8, 11, 13 and 20 is withdrawn in view of the newly discovered reference(s) to U.S. Patent No. 5,785,308 (Flores et al.) and U.S. Patent No. 4,534,252 (Harrington et al.). Rejections based on the newly cited reference(s) follow.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 6, 7, 8, 11, 13, 17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,785,308 (Flores et al.)(hereinafter "Flores et al.").

Regarding claim 1, Figs. 1-12 show a paper feeder comprising:

a first paper feed cassette (115) in which to store a recording medium with a lock state that is selected from an unlocked state where the recording medium can be taken out therefrom and a locked state where the recording medium cannot be taken out therefrom;

a locking portion (including 91) that brings the lock state of the first paper feed cassette (115) into the unlocked state or the locked state;

a second paper feed cassette (120) in which to store a recording medium, capable of selectively entering an unlocked state where the recording medium can be taken out therefrom and a locked state where the recording medium cannot be taken out therefrom;

a lock state transmitting portion (including 107, 108, 113, 115, 114, 116, 111 and 112) that transmits the lock state of the first paper feed cassette (15 or 115) to the second paper feed cassette (120) to bring the second paper feed cassette (20 or 120) into the unlocked state or the locked state in accordance with the lock state of the first paper feed cassette (15 or 115),

wherein the lock state transmitting portion (including 107, 108, 113, 115, 114, 116, 111 and 112) mechanically transmits the lock state of the first paper feed cassette (15 or 115) to the second paper feed cassette (20 or 120), and

wherein the lock state transmitting portion (including 107, 108, 113, 115, 114, 116, 111 and 112) includes:

rotatable lock gears (111 and 111) provided for the first paper feed cassette (15 or 115) and the second paper feed cassette (20 or 120) respectively,

lock portions (36 and 36 in Fig. 11) movable in accordance with rotations of the lock gears (111 and 111) respectively, and

lock reception portions (37) that receive the lock portions (36 and 36 in Fig. 11) at the time of the locked state respectively; and

the lock gears (111 and 111) are connected with each other so that rotation is transmitted therebetween. It is noted that elements 111 and 111 in Fig. 11 can be considered mutilated pin gears. See e.g. class 74, subclass 435 for evidence of "mutilated gears", and see class 74, subclass 415 for evidence of "pin gears".

Regarding claim 3, Figs. 1-12 show that the first paper feed cassette (15 or 115) is provided integrally with the locking portion (including 91).

Regarding claim 6, Figs. 1-12 show a first paper feed cassette unit (11) including the first paper feed cassette (15 or 115); and

a second paper feed cassette unit (12) including the second paper feed cassette (20 or 120);

wherein the first paper feed cassette unit (11) and the second paper feed cassette unit (12) are separated from each other, being removably attached to each other.

Regarding claim 7, Figs. 1-12 show a unit fixing unit (including 45) that fixes the first paper feed cassette unit (11) to the second paper feed cassette unit (12) when the locking portion (including 91) is operated to bring the lock state of the first paper feed

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cassette (15 or 115) into the locked state. In particular, the unit fixing unit (including 45) always fixes the first paper feed cassette unit (11) to the second paper feed cassette unit (12). This scenario meets all of the limitations of claim 7.

Regarding claim 8, Figs. 1-12 show that one of the first paper feed cassette unit (11) and the second paper feed cassette unit (12) is an image forming apparatus body of an image forming apparatus.

Regarding claim 11, at least one of the lock portions (36 and 36 in Fig. 11) is removable (i.e., capable of being removed). This can be done, e.g., by breaking the pin connections 36c and 36c in Fig. 11.

Regarding claim 13, Figs. 1-12 show a first paper feed cassette unit (11) including the first paper feed cassette (15 or 115);

a second paper feed cassette unit (12) including the second paper feed cassette (20 or 120), the first paper feed cassette unit (11) and the second paper feed cassette unit (12) being separated from each other and removably attached to each other in a stack; and

a hook (36a) provided for at least one of the first paper feed cassette (15 or 115) and the second paper feed cassette (20 or 120), the hook (36a) being movable in a direction of the stack in accordance with rotations of the lock gear (111) associated therewith;

wherein at least one of the first paper feed cassette unit (11) and the second paper feed cassette unit (12) is provided with an engagement portion (near 37) engagable with the hook (36a).

Regarding claim 17, Figs. 1-12 show that the lock state transmitting portion (including 107, 108, 113, 115, 114, 116, 111 and 112) includes a link member (107 and/or 108) that transmits the lock state of the first paper feed cassette (15 or 115) to the second paper feed cassette (20 or 120).

Regarding claim 20, Figs. 1-12 show  
at least one more paper feed cassette (25) in which to store a recording medium, capable of selectively entering an unlocked state where the recording medium can be taken out therefrom and a locked state where the recording medium cannot be taken out therefrom;

wherein the lock state transmitting portion further transmits the lock state of the first paper feed cassette (15 or 115) to the at least one more paper feed cassette (25) to bring the at least one more paper feed cassette (25) into the unlocked state or the locked state in accordance with the lock state of the first paper feed cassette (15 or 115).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 6, 7, 8, 11, 13, 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flores et al. in view of U.S. Patent No. 4,534,252 (Harrington et al.)(hereinafter "Harrington et al.").

Regarding claim 1, Figs. 1-12 of Flores et al. show a paper feeder comprising:

a first paper feed cassette (115) in which to store a recording medium with a lock state that is selected from an unlocked state where the recording medium can be taken out therefrom and a locked state where the recording medium cannot be taken out therefrom;

a locking portion (including 91) that brings the lock state of the first paper feed cassette (115) into the unlocked state or the locked state;

a second paper feed cassette (120) in which to store a recording medium, capable of selectively entering an unlocked state where the recording medium can be taken out therefrom and a locked state where the recording medium cannot be taken out therefrom;

a lock state transmitting portion (including 107, 108, 113, 115, 114, 116, 111 and 112) that transmits the lock state of the first paper feed cassette (15 or 115) to the second paper feed cassette (120) to bring the second paper feed cassette (20 or 120) into the unlocked state or the locked state in accordance with the lock state of the first paper feed cassette (15 or 115),

wherein the lock state transmitting portion (including 107, 108, 113, 115, 114, 116, 111 and 112) mechanically transmits the lock state of the first paper feed cassette (15 or 115) to the second paper feed cassette (20 or 120), and

wherein the lock state transmitting portion (including 107, 108, 113, 115, 114, 116, 111 and 112) includes:



rotatable lock members (111 and 111) provided for the first paper feed cassette (15 or 115) and the second paper feed cassette (20 or 120) respectively,

lock portions (36 and 36 in Fig. 11) movable in accordance with rotations of the lock members (111 and 111) respectively, and

lock reception portions (37) that receive the lock portions (36 and 36 in Fig. 11) at the time of the locked state respectively; and

the lock members (111 and 111) are connected with each other so that rotation is transmitted therebetween. The Flora et al. patent discloses lock members (111 and 111), but does not explicitly call such lock members (111 and 111) "gears".

Harrington et al. discloses a mechanical device (e.g., Fig. 1) that converts rotational movement of first and second gears (8 and 8) into linear movement of a rod (5) located between the first and second gears (8 and 8), for the purpose of linearly moving a device (1) attached to such rod (5) back and forth between first and second positions. See e.g., Fig. 1 of Harrington et al. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the Flores et al. apparatus with a gear arrangement for moving the rod (108) (i.e., the link of the lock state transmitting portion) of Flores et al. so that the lock portions (36 and 36) on the rod (108) move back and forth between the first and second positions (locked and unlocked positions), because the technique of operating a rod using gears has been used to improve a similar mechanical device, and a person of ordinary skill in the art would recognize that it would improve similar mechanical devices in the same way, using the

known techniques is obvious. Thus, all of the limitations of claim 1 are met by this combination of references.

Regarding claim 3, Figs. 1-12 of Flores et al. show that the first paper feed cassette (15 or 115) is provided integrally with the locking portion (including 91).

Regarding claim 6, Figs. 1-12 of Flores et al. show a first paper feed cassette unit (11) including the first paper feed cassette (15 or 115); and

a second paper feed cassette unit (12) including the second paper feed cassette (20 or 120);

wherein the first paper feed cassette unit (11) and the second paper feed cassette unit (12) are separated from each other, being removably attached to each other.

Regarding claim 7, Figs. 1-12 of Flores et al. show a unit fixing unit (including 45) that fixes the first paper feed cassette unit (11) to the second paper feed cassette unit (12) when the locking portion (including 91) is operated to bring the lock state of the first paper feed cassette (15 or 115) into the locked state. In particular, the unit fixing unit (including 45) always fixes the first paper feed cassette unit (11) to the second paper feed cassette unit (12). This scenario meets all of the limitations of claim 7.

Regarding claim 8, Figs. 1-12 of Flores et al. show that one of the first paper feed cassette unit (11) and the second paper feed cassette unit (12) is an image forming apparatus body of an image forming apparatus.

Regarding claim 11, at least one of the lock portions (36 and 36 in Fig. 11 of Flores et al.) is removable (i.e., capable of being removed). This can be done, e.g., by breaking the pin connections 36c and 36c in Fig. 11 of Flores et al.

Regarding claim 13, Figs. 1-12 of Flores et al. show a first paper feed cassette unit (11) including the first paper feed cassette (15 or 115);

a second paper feed cassette unit (12) including the second paper feed cassette (20 or 120), the first paper feed cassette unit (11) and the second paper feed cassette unit (12) being separated from each other and removably attached to each other in a stack; and

a hook (36a) provided for at least one of the first paper feed cassette (15 or 115) and the second paper feed cassette (20 or 120), the hook (36a) being movable in a direction of the stack in accordance with rotations of the lock gear (111) associated therewith;

wherein at least one of the first paper feed cassette unit (11) and the second paper feed cassette unit (12) is provided with an engagement portion (near 37) engagable with the hook (36a).

Regarding claim 17, Figs. 1-12 of Flores et al. show that the lock state transmitting portion (including 107, 108, 113, 115, 114, 116, 111 and 112) includes a link member (107 and/or 108) that transmits the lock state of the first paper feed cassette (15 or 115) to the second paper feed cassette (20 or 120).

Regarding claim 20, Figs. 1-12 of Flores et al. show

at least one more paper feed cassette (25) in which to store a recording medium, capable of selectively entering an unlocked state where the recording medium can be taken out therefrom and a locked state where the recording medium cannot be taken out therefrom;

wherein the lock state transmitting portion further transmits the lock state of the first paper feed cassette (15 or 115) to the at least one more paper feed cassette (25) to bring the at least one more paper feed cassette (25) into the unlocked state or the locked state in accordance with the lock state of the first paper feed cassette (15 or 115).

5. Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flores et al. as applied to claim 1 above. The specification of the instant application indicates that the recited "avoidance unit" involves making locking bars 52a, 52b, 52c and 52d removable. See page 26 of the specification of the instant application. The Flores et al. patent discloses most of the limitations of claims 4 and 11, but does not explicitly disclose that the lock portions (36 and 36 in Fig. 11 of Flores et al.) are separable/removable. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make such lock portions (36 and 36) removable (i.e., make an avoidance unit) so that the second paper feed cassette (120) can avoid being brought into the locked state, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. One of ordinary skill in the art would be motivated to make the lock portions (36 and 36) of Flores et al. removable in order to simplify maintenance and cleaning of

the Flores et al. apparatus. Thus, all of the limitations of claims 4 and 11 are met by Flores et al.

6. Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flores et al. in view of Harrington et al. as applied to claim 1 above. The specification of the instant application indicates that the recited "avoidance unit" involves making locking bars 52a, 52b, 52c and 52d removable. See page 26 of the specification of the instant application. Flores et al. in view of Harrington et al. discloses most of the limitations of claims 4 and 11, but does not explicitly disclose that the lock portions (36 and 36 in Fig. 11 of Flores et al.) are separable/removable. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make such lock portions (36 and 36) removable (i.e., make an avoidance unit) so that the second paper feed cassette (120) can avoid being brought into the locked state, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. One of ordinary skill in the art would be motivated to make the lock portions (36 and 36) of Flores et al. removable in order to simplify maintenance and cleaning of the Flores et al. apparatus. Thus, all of the limitations of claims 4 and 11 are met by Flores et al. in view of Harrington et al.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Flores et al. as applied to claim 1 above, and further in view of U.S. Patent No. 5,915,802 (Siler)(hereinafter "Siler"). Flores et al. discloses all of the limitations of claim 5, except for an apparatus fixing unit, as claimed.

Siler discloses that it is well known to provide a paper feeder (Abstract) with an apparatus fixing unit (including 40 and 32) that fixes the paper feeder (Abstract) to a support base (18) for the purpose of preventing access to paper inside cassettes (26a-26e), while also allowing service-related activities. See e.g., Abstract of Siler. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the Flores et al. apparatus with an apparatus fixing unit for the purpose of preventing access to paper inside the cassettes of Flores et al., while also allowing service-related activities, as taught by Siler. The apparatus fixing unit (including 40 and 32), as taught by Siler, always fixes the paper feeder to the support base as long as it remains locked. Thus, providing the paper feeder of Flores et al. with an apparatus fixing unit, in a manner as taught by Siler, will result in such fixing unit being able to fix the paper feeder of Flores et al. to the support base at all times (i.e., including the time when the locking portion of Flores et al. brings the lock state of the first paper feed cassette (15 or 115) into the locked state). Thus, all of the limitations of claim 5 are met by this combination of references.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Flores et al. in view of Harrington et al. as applied to claim 1 above, and further in view of Siler. Flores et al. in view of Harrington et al. discloses all of the limitations of claim 5, except for an apparatus fixing unit, as claimed.

Siler discloses that it is well known to provide a paper feeder (Abstract) with an apparatus fixing unit (including 40 and 32) that fixes the paper feeder (Abstract) to a support base (18) for the purpose of preventing access to paper inside cassettes (26a-

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26e), while also allowing service-related activities. See e.g., Abstract of Siler. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the apparatus of Flores et al., as modified by Harrington et al., with an apparatus fixing unit for the purpose of preventing access to paper inside the cassettes of Flores et al., while also allowing service-related activities, as taught by Siler. The apparatus fixing unit (including 40 and 32), as taught by Siler, always fixes the paper feeder to the support base as long as it remains locked. Thus, providing the paper feeder of Flores et al., as modified by Harrington et al., with an apparatus fixing unit, in a manner as taught by Siler, will result in such fixing unit being able to fix the paper feeder to the support base at all times (i.e., including the time when the locking portion brings the lock state of the first paper feed cassette (15 or 115) into the locked state). Thus, all of the limitations of claim 5 are met by this combination of references.

### ***Response to Arguments***

9. Applicant's arguments with respect to claims 14 and 15 have been considered but are moot in view of the new ground(s) of rejection.

### ***Allowable Subject Matter***

10. Claims 10, 12, 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Conclusion**

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 5,413,009 (Fragnito) shows a pin gear 2. U.S. Patent No. 2,040,933 (Gillen) shows a mutilated pin gear in Fig. 6.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS A. MORRISON whose telephone number is (571)272-7221. The examiner can normally be reached on M-F, 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Mackey can be reached on (571) 272-6916. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Patrick H. Mackey/  
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2/1/2008